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SPORTS BOARD WITH INTERCHANGEABLE EDGE SECTION AND CONNECTION MEANS THEREFORE

Field of the Invention

The present invention relates to a sports board having an interchangeable edge section. The invention has been devised in particular, though not solely, in respect of a surfboard having an interchangeable tail section.

Throughout this specification (including the claims), the term "sports board" will be understood to refer to any leisure device designed to travel across a surface, including, but not limited to, a surfboard, sailboard, wakeboard, snowboard, kite-surfing board, sky-surfing board and wave ski. In addition throughout this specification (including the claims) and where the context allows the term edge section shall be taken as comprising any portion of a sports board around the board.

Throughout the specification, unless the context requires otherwise, the word "comprise" or variations such as "comprises" or "comprising", will be understood to imply the inclusion of a stated integer or group of integers but not the exclusion of any other integer or group of integers.

Background

In the case of a surfboard (as a particular example of a sports board), the performance characteristics of the surfboard such as responsiveness, speed, buoyancy and turning circle, may depend on several parameters, including the density of the material from which that board is made, the size of the board, the active surface area, and the shape of the board. In terms of shape, the portions of the board which can generally have a profound influence on the performance characteristics can include the nose, rails and tail.

It is desirable to be able to vary the performance characteristics of a sports board, according to the skill and experience of the user and/or the conditions.

which is intended in use to become embodied with adjacent edge at least of the main portion or edge portion

According to a preferred feature of the invention the first and second engagement portions comprise complementary formations at the faces of the edge portion and the main portion which are to be in abutting relationship when interengaged, wherein when the complementary formations are in said interengagement the edge portion and main portion are incapable of relative movement transverse to the plane of the sports board. According to a preferred feature of the invention the complementary formations comprise have a tongue-like configuration on one portion and a complementary groove-like configuration on the other portion. According to a preferred feature of the invention the complementary formations extend for the full extent of the faces of the edge portion and the main portion which are to be in abutting relationship when interengaged.

According to a preferred feature of the invention the faces of the edge portion and the main portion which are to be in abutting relationship when interengaged have an extent which is non-linear. According to a preferred feature of the invention the configuration of the extent of the faces of the edge portion and the main portion which are to be in abutting relationship when interengaged is symmetrical about the central axis between the main portion and the edge portion. According one embodiment the configuration is arcuate. According to a preferred feature the configuration is generally sinusoidal. According another embodiment the configuration is defined by a set of interconnected straight edges.

According to a preferred feature of the invention the fastening means is located in the region of said interengagement.

According to a preferred feature of the invention the interengageable faces of the engagement portions are formed at least in part to provide the fastening means.

According to a preferred feature of the invention the connection means is configured to extend along at least a portion of the edge of the main portion.

According to a preferred feature of the invention the connection means comprises a first engagement portion adapted to be mounted on the edge portion, and a second engagement portion adapted to be mounted on the main portion, the first and second engagement portions being capable of said interengagement, the connection means further comprising a fastening means adapted to retain the first and second engagement portions in said interengagement.

According to a preferred feature of the invention the engagement portions are adapted to be incorporated into the respective edge portion and main portion during formation of the main portion and the edge portion.

According to a preferred feature of the invention the non-engaging faces of the engaging means are provided with and extension portion which is intended in use to become embodied with adjacent edge at least of the main portion or edge portion

According to a preferred feature of the invention the first and second engagement portions comprise complementary formations at the faces of the edge portion and the main portion which are to be in abutting relationship when interengaged, wherein when the complementary formations are in said interengagement the edge portion and main portion are incapable of relative movement transverse to the plane of the sports board.

According to a preferred feature of the invention, the complementary formations comprise have a tongue-like configuration on one portion and a complementary groove-like configuration on the other portion.

According to a preferred feature of the invention the complementary formations extend for the full extent of the faces of the edge portion and the main portion which are to be in abutting relationship when interengaged.

Figures 2 and 3 are exploded isometric views of the rear portion of a surfboard with an edge portion which is to be applied to the main portion of the surfboard in accordance with the first embodiment;

Figure 4 is an isometric view of the engagement portions according to the first embodiment;

Figure 5 is an exploded view of the rear portion of a surfboard and the second engagement element according to the fourth embodiment;

Figure 6 is an end elevation of the second engagement element according to the fourth embodiment as viewed from the open end of the second engagement element;

Figure 7 is a schematic isometric view of a surf board and associated tail section according to the fifth embodiment of the invention; and

Figure 8 is a sectional view along line A-A of Figure 7.

Description of Specific Embodiments

It is a feature of surfboards that the configuration of the tail portion of the surfboard can influence or vary the characteristics of the board. Furthermore, the surfing characteristics of a board will vary depending upon the sea conditions in which the board is being used and the weight of the user and as a surfer increases their skills the operating characteristics required of the board will vary. Each of the embodiments is directed to a surfboard which has a main portion and a removable tail portion which can be replaced by alternative tail portions to provide for a variation in the configuration of the tail of the surfboard. It is an object of the embodiments to enable a user to vary the tail of the board according to at least some of the conditions which are relevant to the board (e.g. sea conditions, weight and skill of the user) without the need to have a different surfboard for each circumstance. This is achieved by having a removable tail

The engagement portions 17 and 19 are configured on their engaging faces which are to be in engagement with each other such that they will snugly engage with each other and retain the tail portion 13 on the main portion 11 to prevent relative transverse movement therebetween. In order to retain the tail portion 13 in engagement on the main portion 11 and prevent relative longitudinal displacement between the main portion 11 and the tail portion 13, a fastening means is provided between the engagement portions 17 and 19. The fastening means comprises a set of apertures 27, on the first engagement portion 17, which are located at each end and at the central portion of the first engagement portion 17. The fastening means also comprises a second set of apertures 29 located in the rib 23 of the second engagement portion 19 which are located in correspondence with the first set of apertures 27 on the first engagement portion 17. The fastening means further comprises a set of pins or like elements 31 which are receivable through the first and second apertures 27 and 29 when aligned. The pins or like elements 31 may be formed as bolts which are threadably engageable with a threaded portion formed on the lower end of the first set of apertures 27 or any other form of pin-like engagement element.

In addition the ends of the first engagement portion 17 are provided with axially directed pins 28 while the ends of the second engagement portion are provided with correspondingly located apertures 30 which are intended to receive the pins when the engagement portions are in face to face engagement. The interengaged pins and apertures serve in assisting the portions to become engaged and provide the required resistance to movement. If desired additional pins and associated apertures can be located at spaced intervals along the engagement faces to increase the strength and or resistance to movement.

It is intended that, during the fabrication of a board, the rear end of the main body of the blank from which the board is to be formed will be cut away to provide the rear extension 15. The second engagement portion 19 is to be applied to the cut-away portion to surround the perimeter of the rear extension 15 and is fixed in position by a suitable adhesive. In addition, the first engagement portion 17 will be applied to a blank tail portion in order that the blank tail portion 13 can be

According to a second embodiment of the invention, the engagement portions of the main portion and the tail portions are formed as an integral part of the main portion and tail portion.

According to a third embodiment of the invention, the second engagement portion of the main portion takes the form of that of the first embodiment and the tail portion is formed as a single item in which the first engagement portion is formed as an integral part of the tail portion.

The fourth embodiment of the invention, as shown at Figures 5 and 6, is a variation of the first embodiment in which the second engagement portion 119 of the embodiment is provided with a membrane 133 on its upper and lower face which extends between the side arms of the second engagement portion 119. The membrane is formed of a fibrous material corresponding to that which is utilised in the manufacture of the outer layer of the surfboard and the configuration of the membrane is such that, when the second engagement portion 119 is applied to the rear extension 115 of the main portion 111, the membranes 133 will snugly overlie the opposed faces of the rear extension 115. On the laying up of the fibre reinforced plastics resin over the main portion 111 of the board including the rear extension 115, the membranes become embodied into the layers provided on the board at the rear end thereof in order to further positively retain the second engagement portion 119 in position on the rear extension 115.

A fifth embodiment of the invention is shown at Figures 7 and 8. The principal variation of the fifth embodiment comprises the sinusoidal configuration of the faces of the engagement portions. In addition the plane of the rib 223 on the tail section is offset from the plane of the tail section as shown. This offset enables a greater variation in the angular variation that is available in the formation of the tail section relative to the main body of the board.

According to a sixth embodiment of the invention, the fastening means comprises, a set of integral projections and complementary recesses provided with the groove 21 of the first engagement portion 17 and the rib 23 of the